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EXAMINER

SOTOMAYOR, JOHN

ART UNIT PAPER NUMBER

3714

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,179

Applicant(s)

LECHNER, ROBERT J.

Examiner

John L. Sotomayor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 and the newly added claims 55-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 55-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. In response to the amendment filed September 4, 2003, claims 1-31 and the newly added claims 55-58 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-10, 12-14, 16-29 and 31 are rejected under 35 U.S.C. 103(a) as being anticipated by Tran (US 5,892,462) in view of Graf et al (US 4,645,459).

Regarding claims 1 and 17, Tran discloses an apparatus and method with a mission profiler for automatically determining an area containing the mission route (Col 2, lines 46-49), a search engine to automatically search a plurality of electronic collections of terrain source data

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covering the mission route area (Col 2, lines 25-32), an image engine for processing terrain source data into predefined formats (Col 2, lines 32-37, and a terrain engine to automatically compile processed data to create a terrain model for display during flight simulation (Col 3, lines 6-26). Tran does not specifically disclose identifying terrain source data from at least two alternative predefined electronic collections of terrain source data that represents a common region of an area containing the mission route. However, Graf et al teaches two separate, predefined electronic collections of terrain source data covering a common region of any area containing a mission route and that the user may select information for use in the simulation of data from both data collections (Col 9, lines 5-15 and Col 10, lines 2-30). Therefore, it would have been obvious to one of ordinary skill in the art to provide an apparatus and method with a mission profiler for automatically determining an area containing the mission route, a search engine to automatically search a plurality of electronic collections of terrain source data covering the mission route area, an image engine for processing terrain source data into predefined formats, and a terrain engine to automatically compile processed data to create a terrain model for display during flight simulation as disclosed by Tran with identified terrain source data from at least two alternative predefined electronic collections of terrain source data that represents a common region of an area containing the mission route as taught by Graf et al for the purposes of building a highly realistic simulation environment from a plurality of terrain databases.

Regarding claims 2 and 18, Tran discloses an apparatus and method wherein the mission profiler comprises an input for receiving mission route data (Col 2, lines 64-67 and Col 3, lines 1-6).

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Regarding claims 3 and 19, Tran discloses an apparatus and method for automatically dividing an area into a plurality of regions of the mission route and determining a respective resolution of the terrain source data for each region (Col 3, lines 6-26).

Regarding claims 4 and 20, Tran discloses an apparatus and method to determine the area and resolution of regions based upon the type of aircraft or simulator platform being flown on the mission (Col 2, lines 64-67, Col 3, lines 1-6 and Col 3, lines 56-65).

Regarding claims 5 and 21, Tran discloses an apparatus and method receiving data defining a plurality of types of points for terrain details to determine flight area and terrain resolution along a mission route (Col 3, lines 15-26).

Regarding claims 6 and 22, Tran discloses an apparatus and method receiving data defining a plurality of types of points for terrain details to determine flight area and terrain resolution along a mission route and wherein the input to the system is adapted to receive adjustments to the data to output terrain details based upon adjusted data (Col 2, lines 25-46).

Regarding claims 7 and 23, Tran discloses an apparatus and method with a memory device for storing terrain source data (Col 2, lines 32-40).

Regarding claims 8 and 24, Tran discloses an apparatus and method wherein a memory device stores data from prior mission routes (Col 5, lines 57-62).

Regarding claims 9 and 25, Tran discloses an apparatus and method wherein the system compares collected terrain source data with data from prior mission routes to determine the terrain source data that is most acceptable for flight simulation of the mission route (Col 6, lines 25-41).

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Regarding claims 10 and 26, Tran discloses an apparatus and method wherein the system collects the most current terrain source data and uses this information to predict and display mission route data (Col 6, lines 15-67).

Regarding claims 12 and 27, Tran discloses an apparatus and method wherein the image displayed is generated in a predefined format that is a corrected elevation model (Col 2, lines 28-34).

Regarding claims 13 and 28, Tran discloses an apparatus and method wherein the data imported to the system contains geospecific properties for the area containing the mission route (Col 2, lines 15-37).

Regarding claims 14 and 29, Tran discloses an apparatus and method wherein the data for creating the terrain model is based upon a combination of source data in the database and real-time processed data (Col 2, lines 25-46).

Regarding claims 16 and 31, Tran discloses an apparatus and method wherein the data received may be selected from a plurality of source data including elevational data and mission route data (Col 2, lines 32-46).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Graf et al in further view of Wittenburg (US 4,985,854). Tran does not specifically disclose nor does Graf et al teach that the memory device for storing data comprises two memory devices for storing terrain source data and data representative of the terrain source data. However, Wittenburg teaches that a memory device for the generation of photo-realistic terrain imagery comprises first and second ortho-rectified data layers including digitized elevation data and photographic terrain data (Abstract). Therefore, it would have been obvious to one of ordinary

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skill in the art at the time of invention to produce a system comprising comprises two memory devices for storing terrain source data and data representative of the terrain source data.

Combining the system disclosed by Tran with the teaching of Wittenburg produces an imagery source that is photorealistic and provides a view with greater visual accuracy for pilots.

6. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Graf et al in further view of Wysocki et al (US 5,381,338). Tran discloses the import of terrain data that includes information on structures that have been erected on the ground (Col 2, line 44). Tran does not specifically disclose importing data related to vegetation. However, Wysocki et al teaches that in cases where a mission route requires flying at very low altitude terrain information must include such features as the elevation of treetops and limbs (Col 4, lines 38-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to produce a terrain data importer with information related to vegetation and cultural features. Combining the system disclosed by Tran with the teaching of Wysocki et al produces a system with a larger performance envelope for pilots training on the system.

7. Claims 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Graf et al in further view of Ashby et al (US 6,370,539).

Regarding claims 55 and 57, Tran discloses an apparatus and method for flight simulator mission planning with a terrain engine to automatically compile processed data to create a terrain model from electronic databases containing terrain data for display during flight simulation (Col 3, lines 6-26). Tran does not specifically disclose that metadata is used to select terrain source data from the plurality of electronic databases. However, Ashby et al teaches that electronic databases contain metadata tables within the storage media for each version of the data within an

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electronic database allowing the selection and translation of data from the database containing the metadata (Col 35, lines 1-31). Therefore, it would have been obvious to one of ordinary skill in the art to provide an apparatus and method for flight simulator mission planning with a terrain engine to automatically compile processed data to create a terrain model from electronic databases containing terrain data for display during flight simulation as disclosed by Tran with metadata used to select terrain source data from the plurality of electronic databases as taught by Ashby et al for the purposes of selecting and displaying required mission data in a timely fashion.

Regarding claims 56 and 58, Tran does not specifically disclose a first memory device for storing the metadata and a second memory device for storing the terrain source data. However, Ashby et al teaches a means for providing backward compatibility in data source files that requires providing metadata in one storage device to another storage device that contains the source data from which the metadata selects resulting information for subsequent use (Col 35, lines 32-53). Therefore, it would have been obvious to one of ordinary skill in the art to provide an apparatus and method for flight simulator mission planning with a terrain engine to automatically compile processed data to create a terrain model from electronic databases containing terrain data for display during flight simulation as disclosed by Tran with a first memory device for storing the metadata and a second memory device for storing the terrain source data as taught by Ashby et al for the purposes of separating the data stores for greater flexibility in terrain source map generation.

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Response to Arguments

Applicant's arguments with respect to claims 1-31 and 55-58 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Robare et al (US 6,292,745) for a discussion of the generation of a navigation database from geographic data.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Sotomayor whose telephone number is 703-305-4558. The examiner can normally be reached on 6:30-4:00 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Hughes can be reached on 703-308-1806. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4558.

jls
November 5, 2003


S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700